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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/435,803	11/08/1999	MISAO KIMURA	FUJH-16.715	5700
26304	7590	10/01/2004	EXAMINER	
KATTEN MUCHIN ZAVIS ROSENMAN			LAFORGIA, CHRISTIAN A	
575 MADISON AVENUE			ART UNIT	
NEW YORK, NY 10022-2585			PAPER NUMBER	

2131

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/435,803	KIMURA, MISAO	
	Examiner	Art Unit	
	Christian La Forgia	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-12 is/are rejected.
- 7) ☒ Claim(s) 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/8/99</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 July 2004 has been entered.
2. Claims 1-12 have been presented for examination.
3. Claims 1-7 have been cancelled as per Applicant's request.

Response to Arguments

4. Applicant's arguments with respect to claims 8-12 have been considered but are moot in view of the new ground(s) of rejection.
5. See further rejections that follow.

Drawings

6. Figures 8-11 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

7. The information disclosure statement filed 08 November 1999 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

8 The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being obvious over SS7, as taught by both **Access Points On Narrowband Data Circuits in Modern Carrier Environments** **Network Tech Control White Papers** and **CCS#7 Network Dependability Studies: Phase 2**, in view of U.S. Patent No. 6,584,563 to Kikuchi et al., hereinafter Kikuchi, and further in view of Applicant's Admitted Prior Art, hereinafter AAPA.

10. The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference

Art Unit: 2131

under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

11. As per claims 8 and 12, SS7 discloses a plurality of pieces of switching equipment, being connected to each other through a public network, and accommodating data terminals and central management and control equipment connected to the plurality of pieces of switching equipment as shown by page 2, "How SS7 Works" of **Access Points On Narrowband Data Circuits in Modern Carrier Environments Network Tech Control White Papers**.

12. The AAPA discloses the use of public key encryption, in which a public and private key pair is generated and the public key is made available via a database or some other type of public distribution server. An illustration of this can be found in Kikuchi, particularly figures 17 and 18, as well as column 9, lines 42-54; column 18, line 41 to column 19, line 5.

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to store a public and private key pair for each of the switching devices at the central office, since Kikuchi states in the cited section above that such a modification would remove burden of managing all the keys from the switching devices.

Art Unit: 2131

14. It is still another part of public key encryption schemes for the first piece of switching equipment to transmit an identification of the requesting user to the central management and control equipment and the central management and control equipment to return a public key to the first switching device as discussed by column 21, lines 1-23 of Kikuchi.

15. The AAPA discloses returning a common key along with the public key on page 7 of the "Background of the Invention" of the Instant Application.

16. The AAPA teaches wherein the first device encrypts the common key using the public key of the second device also on page 7 of the "Background of the Invention" of the Instant Application.

17. The AAPA also discusses the second device decrypts the encrypted common key by using its private key, and then proceeding with the secure communications using the common key on page 7 of the "Background of the Invention" of the Instant Application.

18. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a public-key encryption scheme for SS7, since **CCS#7 Network Dependability Studies: Phase 2** states on page 25 that such a modification would help in protecting against altering or destroying data in an unauthorized manner.

19. Regarding claim 9, SS7 discloses wherein the central management and control equipment is connected to the plurality of pieces of switching equipment by a No. 7 common channel signaling network in both **Access Points On Narrowband Data Circuits in Modern Carrier Environments Network Tech Control White Papers** and **CCS#7 Network Dependability Studies: Phase 2**.

Art Unit: 2131

20. Neither SS7, Kikuchi, nor AAPA disclose wherein the first piece of switching equipment encrypts the dial number of the called party and the user number of the first piece of switching equipment by using a common key used between the first piece of switching equipment and the central management and control equipment when transmitting them to the central management and control equipment.

21. It would have been obvious to one of ordinary skill in the art at the time the invention was made to encrypt the called party and user information using the common key when transmitting them to the central management and control equipment, since such a modification would add another layer of security, thereby making it more difficult to corrupt the data being transferred.

22. Regarding claim 10, neither SS7, Kikuchi, nor AAPA disclose wherein the central management and control equipment encrypts the public key of the second switching equipment and the common key used between the first and second pieces of switching equipment to transmit them to the first piece of switching equipment, and the first piece of switching equipment decrypts the common key used between the first and second pieces of switching equipment by a private key to the first piece of switching equipment.

23. It would have been obvious to one of ordinary skill in the art at the time the invention was made for the central management and control equipment to encrypt the public key and common key when transmitting them to the first switching device and having the first switching device decrypt the information using its private key, since such a modification would add another layer of security, thereby making it more difficult to corrupt the data being transferred.

Art Unit: 2131

24. Regarding claim 11, SS7, Kikuchi, and AAPA do not disclose wherein the first piece of switching equipment identifies a distinctive number corresponding to secure communication service prior to an originating number of the calling party, the first piece of switching equipment shifts to a secure communication mode and sends the dial number of the called party and the user number of the first piece of switching equipment to the central management and control equipment.

25. It would have been obvious to one of ordinary skill in the art at the time the invention was made for the first switching device to switch to a secure communication service prior to transmitting the called party and user information, since such a modification would add another layer of security, thereby making it more difficult to corrupt the data being transferred.

Claim Objections

26. Claims 9-11 are objected to because of the following informalities: they depend from a cancelled claim. Appropriate correction is required. For the purpose of Examination, the Examiner will interpret claims 9-11 as if they depended from claim 8.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

28. The following patents are cited to further show the state of the art with respect to SS7 and security, such as:

Art Unit: 2131

United States Patent No. 6,711,264 to Matsumoto et al., which is cited to show a security system for preventing a commonly shared encryption key from being deciphered by unauthorized parties.

United States Patent No. 6,154,543 to Baltzley, which is cited to show public key cryptosystem with roaming user capability.

United States Patent No. 6,775,382 to Al-Salqan, which is cited to show recovering encryption session keys.


29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian La Forgia whose telephone number is (703) 305-7704. The examiner can normally be reached on Monday thru Thursday 7-5.

30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (703) 305-9648. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

31. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christian LaForgia
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